

# MEDICAL EXAMINER.

DEVOTED TO MEDICINE, SURGERY, AND THE COLLATERAL SCIENCES.

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## TRANSACTIONS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.

April, 1840.

The President, Dr. GERHARD, in the Chair.

*Tumour of Left Labium, resembling Elephantiasis, removed from a negress.* By ISAAC PARRISH, M. D.

ELIZA COLLINS, a negress, aged 19 years, of robust frame and healthy constitution, first came under my notice last autumn.

I was requested to visit her by my friend, Dr. Gregg, whom she had consulted on account of a tumour of the left labium pudendi. On examination, a large tumour of an oblong form, was found hanging between the thighs and extending almost to the knees; its base occupied the whole of the labium, being moveable and loosely attached. The skin covering the upper third of the tumour on its outer side, was smooth and perfectly natural; in the other parts it was rough and corrugated, resembling, very closely, the appearance observed in elephantiasis. On the inner and upper portion, a sort of sulcus was formed by a portion of the vagina being drawn down. This part preserved the mucous character of the vagina, and was extremely sensitive to the touch; the urine passed over this vaginal portion, producing, at times, excoriation and pain. There was no pain in the body of the tumour; it was of a dense, elastic structure, being equally compressible over its whole surface. The parts within the vagina appeared to maintain their natural position and functions.

The patient was at this time, far advanced in pregnancy, and it was not considered prudent to attempt a removal of the tumour, especially as it could not interfere with the passage of the child's head. In this opinion Dr. Hodge concurred, having examined the patient at our request. The operation was therefore deferred until after parturition. The patient gave the following history of her case. She was married at the age of 15, at which time she was perfectly healthy. Soon after marriage, she discovered a small lump on the side of the labium towards the groin; this increased gradually during pregnancy, and at the time of the birth of her first child, about a year after marriage, it was the size of a large orange. It was slightly painful, but did not prevent her from moving about.

She was delivered in due time, but the child was still-born. The tumour continued to increase, until she again became pregnant, when

it grew more rapidly, and at the time of our examination, it had attained a size somewhat larger than at present. The patient gave birth to her second child last Christmas. The infant, as she supposes, was of full size, but died in twenty-four hours after birth. Nothing unusual occurred during the labour that the patient is aware of. After parturition, the tumour decreased in size for several weeks, after which it began to grow again, until it reached its present dimensions.

On the morning of the 18th inst., I removed the tumour by making an elliptical incision around its base, and dissecting it off from its connections. It was necessary to divide that portion of the vagina which had been drawn down, and which occupied its inner and upper surface.

But two arteries required ligatures; there was, however, copious hæmorrhage from several large veins which entered the tumour at its base, and it was necessary to secure two of these, before the bleeding ceased. The parts were brought together by sutures, and the requisite dressings applied.

The patient is doing well at this date.

Drs. Barton, Ashmead, Kirkbride, Gregg, Warrington, and several medical students were present at the operation.

In cutting into the tumour after its removal, it was found to consist of a white, opaque substance, of uniform density and structure, without any appearance of distinct fibres or of sacs. A thin serous fluid issued from the cut surface in considerable quantity; the orifices of several venous trunks were seen, which could be traced by the probe through the body of the tumour, terminating under the skin in its most depending portion. The substance of this curious growth appeared to us to be condensed cellular tissue, while the appearance of the skin which covered it, bears a close resemblance to elephantiasis. It occurred to us that it might be nothing more than an elephantiasis of the labium, which had assumed this particular form, and manner of growth, from the peculiar structure and position of the part from which it originated. This, however, is a mere suggestion, to test the correctness of which, a more minute examination will be required.

The dimensions of the tumour are as follows: horizontal circumference, one foot four inches; greatest diameter seven inches; greatest diameter of base four inches, least diameter two inches. Its weight was two pounds, eight ounces, avoirdupois.



## CASE OF MENINGITIS.

BY EDWARD HALLOWELL, M. D.

*Read April 6th, 1840.*

Henry T—, æt. two and a half, light hair and eyes, enjoyed good health until the summer of 1839, when he had an attack of cholera infantum of several weeks' duration. He had also a slight diarrhœa in the winter following; with these exceptions, and an occasional cold, never lasting more than a day or two, his health continued uniformly good until Friday, March 13, when he complained of pain in the knee joint; it soon passed off, however, and did not return until the Friday following, when on coming down stairs he complained again of his knee, and said he could not walk. Dr. Pierce saw him in the evening, when he had fever with some difficulty of breathing, for which he had him bled; in the night he was delirious, and the next morning at ten, was seized with a convulsion. He was again bled and directed powders of calomel, jalap and aloes, every two hours, with stimulating injections; between half past ten and two o'clock, he had two other attacks equally severe; blisters were directed to the calves of the legs, and one was applied to the back of the neck.

Dr. P. now requested me to see the case with him, which I did at half past three, when the following symptoms were noticed: decubitus dorsal, body largely developed; lids of right eye about a line apart, of left three lines; pupils greatly dilated, contracting slowly on exposure to the light; right arm at times much in motion, the fingers occasionally touching the head, and angles of the mouth; slight blueness of lips, face livid, pulse one hundred and fifty, small and feeble, not intermittent; respiration sixty, high, no cough; skin cool; bowels costive; been opened three times to-day, by calomel powders, and injections; abdomen distended and tympanitic, appears painful on pressure; left knee joint and thigh of same side much swollen. He died an hour after the visit.

*Autopsy, March 24th, twenty-three hours after death.*

*Exterior.*—Embonpoint considerable; some rigidity of left knee and hip-joint, other joints supple; left knee and thigh one inch greater in circumference than the corresponding parts of opposite side.

*Head.*—But little blood exterior to the dura mater; arachnoid pale and perfectly transparent; a very small quantity of limpid serosity in several of the anfractuositities; veins of pia mater distended; the pia mater itself highly injected; the injection is of a bright red colour, and is not confined to the larger vessels, but extends to their smaller ramifications; it is most marked at the base of the brain, and upon the convex surface of the middle and posterior

lobes; cortical substance pale ash colour, about two lines in depth; medullary substance injected, and softened throughout; no serosity in cavity of ventricles; the substance of the cerebellum is also softer than in the healthy state.

*Thorax.*—Pleuræ moist, not adherent; lungs of a deep violet colour externally; tissue highly engorged, a considerable quantity of dark coloured blood exuding on pressure.

In the apex of the lower lobe of left lung, are a number of crude tubercles of a light yellow colour, and cheese-like consistence; the surrounding tissue is indurated, and of a grayish red colour; the indurated portion does not occupy more than an inch in extent; three or four lines below this is another tubercular deposit, four lines in length by about three in breadth, the tissue surrounding which is simply engorged, presenting not the slightest trace of induration. Mucous membrane of trachea and bronchi for the most part pale, presenting a few dotted points on its surface; consistence normal; bronchial glands not enlarged or tuberculous. Heart of normal size, two and a half inches in length, measured from origin of aorta upon its anterior face; circumference at base five inches; the coronary veins and their ramifications are much congested, the latter presenting fine arborizations of a pale indigo color; the right ostium venosum is occupied by a large coagulum, the greater part of which consists of fibrine, the rest of dark coloured blood; they adhere firmly to each other; the fibrinous portion extends into the right ventricle, to the sides of which it is attached. There is little or no blood in the left cavities; walls of left ventricle three and a half lines in thickness, exclusive of columnæ carneæ; of right, a line and a half. Valves and lining membrane healthy; pericardium pale, containing no serosity.

*Abdomen.*—About half an inch of fat beneath the integuments; peritoneum pale and moist; no effusion within its cavity; intestines moderately distended, of a pale yellow colour; liver of natural size, extending about an inch below the ribs; convex surface marbled with pale yellow and violet; anterior half of under surface of a tea-green colour, the rest pale yellow; tissue firm, containing but little blood; on examining it closely, the acini are observed to be very distinct; they are of a pale yellow colour; the surrounding tissue is reddish violet, the two substances being quite distinct; gall bladder distended with thin dark coloured bile, staining the finger a deep orange. Mucous membrane of œsophagus somewhat congested, a number of small bluish veins being seen upon its surface. Stomach moderately distended, containing a quantity of greenish looking matter without perceptible odour; its inner surface is coated with a thick layer of ropy mucus, on removing which, the folli-



cles are observed to be in a state of unusual development; they are by far more abundant at the pyloric extremity, a few isolated ones only being seen in other portions of the stomach; in the former situation they are thickly agglomerated, many of them being in juxtaposition; they vary in size from that of a grain of mustard to a line or more in diameter; they present no signs of inflammation, their colour being the same as that of the surrounding membrane, above which they are more or less elevated; in each of them is observed a minute central depression; mucous membrane of a pale onion tint, and of natural consistence, yielding strips one inch and a quarter in length along lesser curvature, six lines in greater, and of four lines in great cul de sac; the small intestine contains a moderate quantity of matter of an orange tint in duodenum, and of a lighter colour in the remaining part of the intestine; the mucous membrane is pale, and of normal consistence, yielding strips five lines in length; the mucous follicles throughout its entire tract are greatly developed, being elevated considerably above the surrounding surface of the intestine; they are about a line in diameter; their central orifice is slightly dilated; the large intestine contains a considerable quantity of feces of a pale whitish yellow colour; the mucous membrane is perfectly pale, and of natural consistence, yielding strips of about eight lines in length; the surface throughout is studded with mucous follicles in a state of development, each with a greenish point in its centre; they vary considerably in size, the largest being rather more than a line in diameter; the orifices are more or less dilated. No ulcerations are observed in any part of either the small or large intestine. Mesenteric glands somewhat enlarged; the largest about ten lines in length, pale, not tuberculous. *Kidneys* three and a quarter inches in length by two in circumference; cortical substance pale ash colour; tubular reddish violet; consistence normal. *Spleen* four and a half inches in length by two and a half in breadth, of a slate colour externally, rather softer than natural. *Bladder* moderately distended with urine of a pale citron colour; lining membrane healthy.

*Remarks.*—By a great oversight the knee joint was not examined after death, and the symptoms during life were not very carefully noted; there can be little doubt, however, that the joint in question was in a state of inflammation; rheumatism, the only disease with which it could well be confounded, being of rare occurrence in children of that age; taking this for granted, it illustrates the sympathetic relation which exists between serous membranes, in different and even remote parts of the body; it is indeed, not improbable that meningitis more often occurs in connexion with inflammatory affections of the joints in children, than is generally supposed. A case

resembling the above, came under my notice in the summer of 1839: it was that of a child five years of age, whose health had been good until about four months before her death, when she received an injury of the ankle joint, from the fall of a heavy body upon it. The joint continued swollen and painful, but notwithstanding this, she was suffered to run about, and caries was the consequence. The limb was kept in a fracture box for several months, with a view of arresting the inflammation and inducing anchylosis, but matter continued to form, and made its appearance at intervals by two openings, one upon the outer, the other upon the inner aspect of the joint. A severe attack of ophthalmia occurred during the treatment, which came near destroying vision, but from this, she entirely recovered. The illness which terminated her life, commenced on the 28th of June. I did not see her until Saturday, the 30th; she had then some fever, but the pulse was soft and compressible; there were exacerbations in the middle of the day and towards evening; the stomach was very irritable, rejecting almost every thing taken into it, and she complained of pain in the head; the two most striking symptoms were the vomiting and the pain in the head, which was constant; it was increased by sitting up in bed; the countenance was rather pale, except during the febrile exacerbations; the tongue was clean, the abdomen supple, respiration natural; the bowels were costive. On the morning of her death she appeared rather better; she sat up in bed and conversed cheerfully; the pulse, however, was accelerated and somewhat tense, and the face rather flushed; at half past one, two hours after visit, she was seized with convulsions, which were of extreme violence, and died the same evening, at 7 P. M.

*Autopsy, June 5th, twenty-four hours after death.*

*Head.*—A considerable quantity of blood, exterior to dura mater; veins of pia mater moderately distended; arachnoid moist and transparent; no effusion beneath; pia mater very minutely injected throughout its whole extent, the injection of a bright red colour, occupying the smaller vessels and their ramifications; cortical substance pale, medullary dotted with blood; the whole substance of the brain softened.

*Thorax.*—Pleuræ pale and moist; lungs slightly engorged, crepitant; no tubercles.

*Abdomen.*—Peritoneum healthy. *Liver* not enlarged, of a chocolate colour, firm; mucous membrane of stomach covered with a quantity of yellowish mucus, readily removed with the handle of the scalpel; surface pale, except at great cul de sac, where it is somewhat injected; mucous membrane of large and small intestine pale, and apparently of normal consistence; the isolated follicles of the large intestine are quite apparent on holding it up to the light, but do not appear to be unusually developed.



*Kidneys healthy. Spleen, Bladder* and other organs not examined. We have here the case of a child, labouring under a chronic inflammation of one of the joints, attacked with fever of apparently a remittent type; there exists, however, extreme irritability of the stomach with constant pain in the head, both symptoms of severe cerebral disturbance, and which demand, especially in children, the closest vigilance on the part of the physician. Death ensues on the fifth day from the commencement of the febrile symptoms, and in about six hours after the occurrence of severe convulsions. The autopsy presents the anatomical signs of acute meningitis without effusion. M. Foville, in alluding to the sympathetic relation which exists between inflammation of the meninges and that of other serous membranes, mentions a case in which it was displayed at a much later period of life. A man sixty years of age was operated upon for hydrocele, by injection; almost immediately after the operation, he was seized with acute inflammation of almost all the synovial membranes, including those of the temporo-maxillary articulations, of the last phalanges of the fingers, and even of the atlas with the odontoid process; ankylosis occurred in several of the joints. All the rational signs of acute meningitis were observed at the same time as those of the inflammation of the joints.\*

The first of the cases I have detailed, presents other points of interest; the tubercular deposit is remarkable from its situation, and its limited extent, being found in no other portion of the lungs than the upper part of the lower lobe of the left lung, and in no other part of the body; it occurred too in a child, in the enjoyment apparently of robust health; at first sight it might be supposed that it had followed an attack of lobular pneumonia, and that the tuberculous deposit was the result of a chronic induration of the lungs, but this opinion would seem to be disproved by the previous history, and the appearances after death; the child never had more than a slight cold, lasting but a day or two, and no marked signs of bronchitis were observed at the autopsy; at some distance below the indurated portion, another tuberculous deposit is observed in a part of the lung, which up to the day of the child's death must have been perfectly healthy, being only in a state of very recent engorgement; a fact which proves, we think, that the induration was the consequence and not the cause of the tuberculous deposit contained within it. That tubercles are of inflammatory origin is maintained by the best authority, but in by far the greater number of cases, we are disposed to think them quite independent of such a process, being the effect of depressing causes acting upon the whole system; such was probably the case in the present instance.—

\* Dict. de Medecine Pratique. Art. Meningite.

The parents are quite poor, living in a small house in a narrow, illy ventilated street, and the father is of intemperate habits. The case is also interesting, from the extreme development of the mucous follicles of the stomach and intestines. Even in cholera infantum, and in advanced stages of the tuberculous disease, in children, it is rare to find them occupying so great an extent of surface. It will also be remembered, that there was no corresponding diarrhoea.

## THE MEDICAL EXAMINER.

PHILADELPHIA, APRIL 11, 1840.

WE make some extracts from the eloquent valedictory address of Professor Jackson to the graduates of the University of Pennsylvania. The duty of delivering the address fell unexpectedly upon Dr. Jackson, and it was therefore thrown off nearly with the rapidity of an extempore lecture. This, in our estimation, rather adds to its merits; it gives it the warmth and feeling which are appropriate to a valedictory lecture, instead of smoothing a parting address down to a mere formal farewell. The subject of the address is the duties of a physician in various circumstances, in adding to his professional acquirements and forming a professional character, in contributing to the advancement of medical science, and the duties which he owes to his patients, and to his professional brethren.

The necessity of preparation for opportunities as they may offer, is another prominent division of the lecture. These are numerous enough to occur to all men, and by being ready to fill up the openings that from time to time show themselves, professional progress becomes comparatively easy.

A few days before the delivery of the address, a young physician in whose physiological researches Dr. Jackson had felt a warm interest, ended his short career. A beautiful episode to the memory of the youthful student of nature, finds an appropriate place in the valedictory address.

“Human power cannot command and govern the exterior circumstances of the world, and bend them exclusively to man's purposes. They are directed, by a divine and superior agency, to accomplish ends intended from eternity. Men are the instruments made use of for their accomplishment. They are endow-



ed with the qualities fitting them for that object.

"If we cannot change the fixed order of exterior events and circumstances, it is in our power to regulate and control ourselves, to form our principles and characters, to constitute and govern the interior circumstances of our nature. In this manner, man can adapt himself to the events that overtake and involve him. He proceeds with them, may appear to give them direction and control, for he works with them, and reaps fortune and fame: or, should he fall a victim to their overwhelming power when placed in opposition to them, he bows in submission and resignation to the irresistible destiny of a divine law.

"The highest ambition of any individual as it respects this world, should be, to qualify himself by a just understanding and preparation of the powers he possesses, for accomplishing some one of the infinity of ends, that can be perfected in the great movement of our social scheme, by any one generation of men. No one individual, it is probable, more than another, is selected by Divine Providence for a given end. He has provided, in the immense variety of mental, moral and physical qualifications, for the combinations necessary to form the character adapted to any especial purpose. It is always existing. The occasion and the opportunity for the calling of it into action, are alone required, when it appears on the stage, in its place and time.

"The success of one individual more than another, in any particular department of science, or line of pursuit, depends on his being always ready to seize on the opportunity and occasion, as they may offer, by which he can be introduced on the field of action, and his powers be brought into play.

'There is a tide in the affairs of men,  
Which, taken in the flood, leads on to fortune.'

"The difficulty that besets most men, is, either that the opportunity does not present itself when they are prepared: or, when it arrives, they have neglected the preparation that is required. Opportunity once lost, is lost for ever. It seldom comes a second time.

"The beautiful apologue of the ten virgins, is not less applicable in a worldly, than in a religious meaning.

"Be like unto the wise virgins, have your lamps trimmed and your oil ready, that when the bridegroom (opportunity) cometh, you may enter in and reap the enjoyment of your foresight and precaution. But if, like the foolish, virgins, you neglect your lamps, have no provision of oil, and when the bridegroom cometh, you have then to look after your neglected means, the door will be shut, and you will in vain seek for admission. Neglect and oblivion will be your portion."

"It is more important that you should obtain, as early as possible, practical knowledge

by immediate observation. Neglect no means for this purpose. Frequent hospitals, follow the attendance of dispensaries, bestow your services on the poor, so many of whom require and gladly avail themselves of medical assistance. The principal object you should aim at, is to acquire a knowledge of disease. The symptoms alone should not engage your attention. They are the signs by which a disease is manifested: they are not the disease. What is of still more consequence, is, that you study, by close attention, the natural history of disease, the extent of the natural powers of the economy in their cure, and the methods that nature adopts, in the play of the reactive forces and operations of the system, to disembarass it of disease. This information is the most certain basis of a safe, sound and judicious treatment. It is to be acquired by the bedside, where you must watch the progress of a case, as it traverses its different stages, and note, in writing, as they occur, the phenomena you witness.

"Most young practitioners mistake the proper object of their clinical studies and observations. They believe the first and great object to be attained, is the prescribing of physic. This is a vulgar notion, cherished by the general ignorance of society as to the true nature of medical science, and the proper character of a physician. It is difficult to resist the importunities of patients and friends of the sick, who expect from the administration of drugs some miraculous influences: it is difficult to divest ourselves of the belief, so flattering to self-love, that with our physic, we are omnipotent in the power of controlling the economy according to our views, and of overcoming disease.

"The last and least important part of the science of medicine is, the dosing of patients with medicines. Understand me: do not suppose I undervalue the immense services derived from the judicious administration of medicines, in the treatment of disease. Medicines produced in the animal economy operations such as nature is observed to excite, as the means of restoration. These processes of nature, the physician imitates; he excites them, artificially, with his medicines, or other remedies. When they are done happily, at the appropriate time, and in accordance with the natural law of the disease, they prove most beneficial, and are curative in their operation. But when the medicinal operation and disturbance are inopportunately provoked, when they come in conflict with the natural law of the disease tending to its solution, confusion and new disorder in the functions and organs are the consequences. The result will be to retard the recovery of the patient, to produce chronic disorders of long suffering, or destroy the power of recovery. *Vel educes quæ educenda non sunt; vel augebis morbum; vel jugulabis ægrotum.*



"Most physicians learn from experience, that often their highest art consists in amusing the patient, inspiring confidence, and thereby quieting the system, that would otherwise be disturbed from nervous agitation, by some imaginary remedies, while nature is permitted undisturbed to accomplish a cure.

"The laws of nature are God's ordinances in the natural world. Man can do nothing without them or against them. It is the first and great object of every scientific practitioner of medicine, to study them and to master them, as they are displayed in the life-mechanism of living beings. Of these laws, it is his pride and boast, that he is the minister and interpreter. He is the servant of God, ministering to and alleviating the temporal and physical wants and infirmities of suffering humanity in the mode of his appointing; just as the ministers of our holy religion are God's servants, ministering to and watching over the spiritual failings and the endangered condition of man's soul, according to his revealed will. Medicine is a mission and a ministry, inferior only to that of religion.

"It is not less an obligation, that you should exert your powers in contributing to advance and improve the science of medicine, than it is to perfect your own knowledge. Medicine, regarded as an art, or a science, all are ready to acknowledge, is imperfect. That it can be advanced to a much higher degree of completeness, cannot be doubted, by any who are familiar with what medicine has been, what has been done within a few years, and what is now doing in the science.

"The advancement of medicine, consists in the greater accuracy and extension of its facts; with an adherence to a more right method of logic and reasoning. It is assuming daily more of the character of a physical and positive, and losing that of a speculative and metaphysical science.

"General theories are but little in vogue. The versatility that prevails in diseases, forbids the expectation, that any one doctrine ever can embrace conditions, so endless, diversified and fluctuating.

"Causes of a general nature, inappreciable except by the phenomena they produce, acting in periodical cycles of varying duration, exert profound modifying influences of different nature, on organized beings, more especially on the vital energies and organization of the human race. From these, result not only the great epidemics, dissimilar at each period, that prevail over whole zones of the globe, but the especial periodical constitutions that impart a common character to nearly all the diseases occurring within that cycle. A doctrine founded on the facts, as they then are observed; and a system of treatment, adapted to a particular constitution, or to a particular epidemic, may be arranged. They will be true for the time: but must fall, as that constitution, or epidemic

influence passes away, and a new revolution has brought forward a new train of morbid conditions and phenomena.

"In these circumstances are found the explanation of the diversified theories and modes of practice, that have prevailed at different times in medicine. This has been urged as a reproach on the science and our profession. It is the consequence of things as ordained by the Creator. A theory and practice are true and applicable only for a time. A general and persistent theory is an absurdity in medicine—medical theories must be numerous and variable, for the facts, of which a theory is the aggregate exponent, are themselves, for the most part, complex, variable and transitive.

"You must not, then, wed yourselves to any theory, nor permit yourselves to be enlisted as partizans to any doctrine or practice. Use your theories as a lame man does his crutches; but be ready to throw them aside, as soon as they are useless.

"The advance of medicine, consists in the establishment and verification of facts. But what an endless labour is here opened to the profession. It extends over the whole field of organized beings, vegetable and animal, from the highest to the lowest in the scale, in their natural and diseased, or unnatural conditions. In all these are presented the phenomena of life and organization; the products of life and organization; and the agents that influence the vital and organic phenomena in all their states. These bear with more or less force on medicine, as a science, in illustrating the complicated, obscure, and, without this collateral aid, incomprehensible phenomena of the human economy, the more especial object of medical investigation.

"It is to facts that alone can illustrate medical science, that you should devote your time and attention. Whatever may be the particular bent of your genius, or the kind of talent you possess, there is, in medical researches, some one pursuit adapted to it. You can have no excuse for negligence. The qualifications for these objects, are industry, perseverance, application. These are in the power of each of you. They alone may enable you to establish important truths to be embodied in the science. Facts admitted into science, may be regarded as medallions struck to commemorate an event, or to perpetuate a renown. They carry to remotest time the name of their discoverers.

"The labour given by most men to the acquisition of wealth, applied to scientific objects, would confer on you a celebrity, would make your labours useful to future generations, as to the present. To a generous mind these are far more exciting motives, than the more sordid feelings of avarice."

"Organic phenomena, from their extraordinary complication, could not be approached by analytic processes, until the collateral sciences



had reached a sufficient degree of perfection to furnish the means. This period has arrived. Organic phenomena are attacked by every method of analysis. This is exemplified in the history of organic structure. General anatomy, or the reduction of the organs to tissues, commenced in our time, is now completed. The tissues themselves, are now undergoing a further reduction to simpler elements and forms. The microscope, brought to so much perfection, as to be free, to a great extent, from the defects that rendered it at times delusive, is an important means by which this is accomplished. The result is the creation of microscopic anatomy. Two great works are now issuing from the press devoted to this subject. The one, the splendid publication of Professor Berres of Vienna, '*Anatomia Partium Microscopicarum Corporis Humani*;' the other, a more complete and equally splendid work by Professor Mandl, of Strasburg, '*Anatomie Microscopique*.'

"Besides the above large and general works, numerous contributions have been made by other distinguished observers, on the microscopical structure and composition of the tissues and fluids. Professor Henlé of Berlin, has made a most elaborate demonstration of the organization, the physiology and pathology of the mucous tissues. Erdman, Valentine, Burdach, Wagner, and others have furnished new and important facts on the elementary organization of the nerves and muscular tissues.

"Time will not admit of the many examples that could be adduced of the new facts and new views, arising out of them, in anatomy, physiology and pathology, derived from microscopical researches in those departments.

"Organic chemistry is not less rich in its contributions to anatomy, physiology, and pathology, and will soon throw a brilliant light on the darkest spots of our science.

"It will not be accounted rashness, by those who have looked into this subject, when I assert, that under the searching analytical review of the facts of medicine, and application of analytical philosophy to medical science, a large portion of what has been received, and is regarded as established, will be changed, or swept away. Doctrines and opinions founded on those facts, now holding sway, must disappear. They will take their place in the history of the science: they will not belong, as now, to the science.

"But what are we doing in this stirring and busy time, contributing our aid to the improvement of our science? I fear, it must be said, almost nothing: who amongst us is at work in these new fields of scientific research, seeking imperishable fame? I fear, it must be said, no one.

"Three years have this day elapsed, since a young student, full of zeal and ambitious ardor in the pursuit of knowledge, stood on this stage, and received, as you have, the ho-

noured diploma of this school. He presented to the faculty as a thesis, an elaborate essay, in which he confirmed Müller's discovery of lymphatic hearts, or pulsatory lymph organs, in the Batrachia, and extended it by proving their existence in other animals. He did not abandon the course he had commenced so well. He continued cultivating comparative physiology and microscopical investigations, though his means were but moderate. He published as a part of his labours, in the last year, an interesting series of observations on the venous circulation. He was engaged earnestly in pursuing these subjects, and but a short time since, I could have answered the question by adducing Dr. Allison as one, who promised to illustrate by his talents and industry, this department of American science. But, alas, his career is ended. A few days since, and his body was consigned to the tomb. Frail in constitution and delicate in form, he fell a victim to his exertions. A wound, received in dissecting an animal, on which he was making observations, was remotely, as I have been informed, the cause of his death.

"The war-trump, and the muffled drum, and the measured tread of armed men, and the musket shot pealing over the grave, honour the death of the soldier, the slaughterer of his brother man. But the student who meets his death battling for truth in the great arena of science, passes to an unknown grave, followed by the regrets and the tears of the few who knew his worth. Yet there is another judgment, and another reward than that of man. A brighter glory will arise from the obscure grave of the unknown student, than ever yet surrounded the blood-stained monument of the warrior of an hundred fields."

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## DOMESTIC SUMMARY.

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### PHILADELPHIA DISPENSARY.

#### *Practical Obstetric Department.*

At a meeting of the class, held at the close of Dr. Warrington's Course, February 17th, 1840, Mr. J. H. Gamble of Virginia, Chairman, Mr. Thomas W. Harris of Tennessee, Secretary, the following preamble and resolutions were unanimously adopted:

While America may justly claim distinction in Schools of Practical Anatomy, Surgery, Clinical Medicine, Chemistry and Botany, it has hitherto been a source of regret, among the votaries of medical science, that no effective institution has, until recently, been established combining the practice of obstetrics with the theory; and that thus annually issued from the halls of her Universities, crowned with their highest honours, candidates for practice and fame comparatively unqualified for the duties of the Obstetrician.

*Resolved, therefore, That we congratulate*



the rising members of the medical profession in general, and those in particular whose inclinations may lead them to the prosecution of obstetrics and female diseases exclusively, that the barrier hitherto existing to the attainment of this accomplishment is now entirely removed by the individual enterprise and untiring exertion of the Accoucheur of the Philadelphia Dispensary; who, while enlarging the sphere of his active benevolence to patients, adds to the facilities afforded by the institution over which he presides, a profound acquaintance with his subject, an established reputation, an extensive practice, unwearied zeal, and a felicity of imparting instruction peculiarly his own.

*Resolved*, That as the Practical Obstetric Institution of Philadelphia, is not only incomparably valuable in itself, in which the student renders practicable, in the lying-in-room, the theory of his preceptor, but as it is also the only one of the kind in the city, we take this opportunity of making the public aware of the advantages it affords.

*Resolved*, That as the close of the session unavoidably separates us from an institution so eminently interesting and instructive, we hereby testify our gratitude to Dr. Warrington as a benefactor, our admiration as a teacher, and our esteem as a gentleman.

*Resolved*, That the secretary wait upon the editors of the several medical journals of the city, requesting the publication of the foregoing preamble and resolutions.

*Resolved*, That Mr. S. Fuller of Pennsylvania, Mr. J. D. Mason of Tennessee, and Mr. Thomas W. Harris constitute a committee to transmit a copy of the proceedings of the meeting to Dr. Warrington.

J. H. GAMBLE, Chairman.

Thomas W. Harris, Secretary.

*Remarks on Hydrated Peroxide of Iron.* By WILLIAM R. FISHER, M. D., late Professor of Chemistry and Pharmacy in the University of Maryland, &c. &c.—The peroxide of iron has recently acquired an importance in its therapeutical and pharmaceutical relations, from its use as an antidote against arsenious acid, which renders any apology for the notice here intended to be taken of it altogether unnecessary. Indeed, some notice of its properties as an antidote, mode of preparation, and preservation, seems to me to have become indispensable, from at least one erroneous view in regard to it, which appears still to prevail, and which may in some degree restrict its use and diminish its value. This error consists in the belief that the antidote, to be effectual, must be *freshly prepared*: a dictum which reached our shores simultaneously with the knowledge of the peculiar properties, as regards arsenious acid, of the oxide itself. Subsequently, each one who has written upon this subject has attached value to this italicis-

ed caution, and has thus perpetuated, at all events until now, a direction which has a tendency to banish or exclude a valuable remedy from the shops, and to compel the unfortunate victim of malice or accident to await the hurried preparation of the means by which his pangs may be alleviated. And this fresh preparation, too, has been required in the same breath, in which we are told that not a moment's time should be lost in the administration.

Having contributed in some measure to the continuance and extension of this belief, in a table of poisons and antidotes, prepared for the general therapeutics of Prof. Dunglison, published in 1836, it appears to be my particular duty to disabuse the pharmaceutic and medical public of this impression, and to show that the fresh preparation of the hydrate of peroxide of iron as an antidote to arsenious acid, is not necessary, and that any such view of its character is unsustained by sound philosophy or experience.

It is not necessary that the various authorities for the use and successful employment of this antidote should be here reviewed to establish its value. Enough has already been shown in other journals to satisfy the most incredulous, and it is only necessary to refer those who may yet need information on that score, to the contents of this Journal, vol. 10, page 263, and the American Journal of the Medical Sciences, vols. 15, 16, 20, 23, 24,\* for experiments and cases which must prove fully satisfactory. Considering, then, its value as an antidote established by these records, let us examine the substance chemically, and see in what manner its character, composition, or properties can possibly be so altered by age or exposure, that its use would be rendered fruitless. It consists of iron combined with oxygen, and in those proportions, too, in which of all others these substances delight to combine. Into which combination, not only iron itself, but all its compounds containing less oxygen, spontaneously pass, when exposed to the air for any length of time; in other words, when kept. This state of oxidation, then, is that in which it is not difficult to retain the metal, and is one from which the metal does not spontaneously pass by exposure or prolonged keeping.

If it undergo no change from these causes, how can age affect it, or why must it be fresh? Will the carbonic acid of the atmosphere, by combining with it, neutralize its properties, and thus affect its value? Such is not the case. Peroxide of iron has less affinity for carbonic acid than the protoxide; so much so, that the precipitated carbonate of iron, which is a protosalt, when first formed, loses nearly

\* Vol. 15, page 537, reported by Drs. Bunsen and Berthold.  
 " 16, " 239, " " Prof. Orfila and Dr. Leger.  
 " 20, " 222, " " Mr. John Robson.  
 " 23, " 503, " " Dr. John Murray.  
 " 24, " 243, " " Dr. Deville.



all its acid, by its base passing to the maximum of oxidation, as is well known, and established beyond a doubt. If kept with any kind of care, carbonic acid is the only acid to which the oxide could be exposed, and we have seen, that carbonic acid opposes no barrier to the preservation of the oxide. Theory, then, affords no reason why the antidote should be *freshly prepared*. Experience gives us an equally strong reason against it. In the latter part of September, or beginning of October, 1837, I was called upon in great haste for some *freshly prepared* antidote for arsenious acid, for a patient suffering from the poisonous effects of arsenic; with all possible expedition the antidote was prepared, but too late for the relief of the victim; although no time had been unnecessarily lost, the patient expired as the first doses were administered. During this preparation, which was the first I had made of this oxide, it occurred to me forcibly, that if it were suffered to remain diffused through the water in which it had been washed, that it would always be in the condition of a recent precipitate, and, in accordance with this view, it was so put aside. The antidote remained in the laboratory of the University of Maryland, unnoticed and untouched, except on one occasion, when it was exhibited to the medical class of the ensuing winter, as a specimen, until June 1st, 1838, when I was called upon by my friend, Dr. Thomas, for some of the antidote. Having none other to supply him with but this, prepared, at the least, eight months before, recourse was had to it. The result of its use is detailed by the doctor in the American Medical Library and Intelligencer, of July 16th, 1838. It is only necessary here to say, in regard to it, that the patient for whom it was employed, recovered.

The cases here quoted, serve the double purpose of showing the fatal consequences which may result from the loss of time consumed in the preparation of the antidote, and that *freshly prepared* hydrated peroxide of iron is not necessary to render arsenious acid insoluble and innocuous.

Theory and experience, then, both concur to sustain the position which I assumed at the commencement, and, I trust, will induce those whose province it is, to be constantly prepared with the means which have been shown to be worthy of firm reliance. Did not our knowledge of the properties of peroxide of iron teach us that it can undergo no change by age or exposure, I should not rely so confidently upon the single case known to me; but the result in that case was so exactly in conformity with the inductions from theory, that it deserves to be regarded as positive evidence.

Independently of my own observations, the experiments of Dr. Von Specz,\* Professor of

Chemistry in the Theresian Academy of Vienna, sustain the opinion herein advocated, by showing, 1st, "that this preparation, when properly made, and preserved in bottles, with good glass stoppers, will retain its virtues for a very considerable time." 2d, "that rust of iron, and hæmatite, although they do not prevent all the bad effects of arsenic on the system, may, in defect of the hydrated peroxide of iron, be employed as antidotes to that poison." And the case reported by Mr. John Robson\* also corroborates this view. He having no hydrated peroxide of iron at hand, administered six drachms of the carbonate of iron in water, in two draughts. "The patient said his stomach felt cooler. His pulse fell from 130 to 112. The pain ceased, or nearly so." Now it will be observed that in none of the cases here referred to, was *freshly prepared* hydrated peroxide of iron the agent by which the antidotal effects were produced. Dr. Von Specz employs the powder in all his experiments with the hydrated oxide, which could not have been an immediate preparation, finds that it can be preserved a considerable time, and finally discovers that other peroxides may be used in default of the hydrate, one of which is as old as the creation, the other, age unknown. It is true the hydrate is always to be preferred, but its place can be supplied. Dr. Robson also gave the hydrated oxide as soon as it could be got ready; (an hour and a half after the carbonate was given,) but his patient had been already relieved by the *old* preparation, first swallowed. The recent preparation was not *well washed*, and many urgent symptoms supervened upon its use. "He (the patient) said he felt sick, and worse after taking the physic." The next morning, the prepared oxide, more carefully washed, was given. "It was not so good to take, but he had no more sickness," &c.

These, then, it is asserted, prove that age is no obstacle to the effects of peroxide of iron; that it can be kept, and that the precipitated peroxide must be thoroughly washed. It can scarcely be necessary to remind the readers of a scientific journal that the carbonate of iron, and hæmatite, are almost wholly peroxide of iron. The former containing a trifling amount of carbonic acid; the latter, perhaps, some siliceous or earthy matter. My own view is, that these would be equally efficacious as antidotes, if in an equally impalpable state, with the precipitated peroxide.

The only possible reason which I can conceive for requiring the oxide to be *freshly prepared*, is that it may be administered in as finely divided a condition, as nearly approaching solution as possible; and this certainly can only be accomplished by employing it in the pulpy state of a recent precipitate. This state

\* American Journal of Medical Sciences, Vol. 21, page 519.

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\* American Journal of Medical Sciences, Vol. 20, page 222.



is, however, not inconsistent with age, and may always be preserved, for any reasonable length of time, as I know by experiment, simply by suffering enough of the water with which the precipitate has been washed, to remain, in order that the oxide may be diffused through it. So very minutely divided is the oxide in its precipitated state, that a trifling agitation serves to distribute it promptly through the supernatant fluid, which thus forms a medium for its administration, as well as a means for apportioning the dose. This mode is that which has been employed in the preservation of all the hydrated peroxide which I have ever made. Theoretical considerations induced me to employ it, counter to the dictum against which I now write; and experience, in the case already quoted, so fully satisfied me of the advantages to be derived from it, that I at once commenced the preparation of a large supply of the antidote, so that any future case might not be deprived of the benefit which can be obtained from its immediate use. Some of the oxide, prepared in June, 1838, is now by me, and to all appearance is entirely unchanged. No critical examination could distinguish it from a preparation a week old. Several friends, who have seen it, concur in this opinion.

It was my intention to have here rested the argument, but just as it was completed, I was indebted to the kindness of Mr. Durand, who, ever anxious for the diffusion of information, and the improvement of our science, placed in my hands the twenty-fourth volume of the "Journal de Pharmacie," Paris, 1838, containing a communication from Drs. Bunsen and Berthold, "*On the mode of preparing in the most convenient form the Hydrated Sesquioxide of Iron, as an Antidote to Arsenious Acid.*" To these gentlemen we owe this employment of the hydrated oxide, and I therefore, with the greater pleasure, adduce their testimony in favour of the views which have been herein urged.

As the subject now under discussion is in regard to the preservation of the oxide, the latter portion of their paper is first quoted, in their own words: "It is altogether inconceivable," say they, "that any one, relying upon uncertain experiments with animals, should have recommended the preservation and use of the antidote in a dry state, since a number of experiments already made, coinciding with our own, tend to this result, that the action of the sesquioxide of iron is null, and that of the *dry* hydrate incomplete; of which, the simple fact that the dry hydrate does not ever precipitate, wholly, in the cold arsenious acid, should have previously apprised every one."

The conclusions, then, which I consider established, both by the evidence here offered, and the absence of evidence to the contrary, are

1st. That we are justified in believing that

peroxide of iron undergoes no change from age, by inferences drawn from the known great affinity of iron for oxygen.

2d. That the discovery of native peroxide, entirely unchanged, affords positive testimony of the foregoing position.

3d. That relief has been afforded by the use of the peroxide of indeterminate age.

From which, as a necessary consequence, it follows that neither reason nor observation sustains the opinion, that the precipitated hydrate of peroxide of iron *must be freshly prepared* to render it available as an antidote to arsenious acid.

In regard to the precipitated hydrate of peroxide of iron, it is proved,

1st. That, owing to its state of aggregation, when moist, it is the preferable form in which to administer it as an antidote.

2d. That it should be well washed before being so employed.

3d. That the extemporaneous preparation of the antidote is inadvisable, because time is lost in the administration, beside the inability to wash it.

4th. That the hydrated peroxide of iron can be preserved any length of time unaltered, and ready for immediate use by suffering it to remain diffused through a portion of the water in which it has been washed, corked up in bottles.\*

And lastly, That every apothecary, and physician residing in the country, should always be provided with the antidote thus preserved in bottles of a convenient size for use.

Enough, has now, certainly been said to establish the position which I undertook to demonstrate, and a few comments upon the mode of preparation are now offered. Several modes have been suggested for the preparation of this oxide, which, although varied in detail, are essentially the same in principle: effecting the oxidation of the iron to its maximum extent, by the decomposition of nitric acid, and precipitating the oxide thus obtained by ammonia.

It is unnecessary to review these formulæ in detail, further than to indicate a few reasons for the preference given to the formula here proposed. If nitric or nitro-muriatic acid be employed as the solvent of iron, as prepared by one author, violent and inconvenient action, and great heat, attend the operation, and the clothing and utensils of the operator encounter some risk. To this objection our formula is not exposed. And the direction given by the same authority for "*drying the powder in the shade,*" is entirely inconsistent with our

\* These first, second, and fourth positions receive additional strength from the directions given by Drs. BUNSEN and BERTHOLD for making this oxide. They will be mentioned further on, and although not italicized in the text, have been so printed here to distinguish them.



whole object, the preservation of the oxide in a pulpy state. Another writer, anonymous, it is true, but one who evidently understands his subject, offers two formulæ for this preparation. The former of which, with the exception of not affixing quantities, coincides exactly with our mode of preparation, although nothing is said by him of preservation, and one expression of which is quoted in his own words, because reference will shortly be made to it: "The alkali throws down the hydrated peroxide as a reddish precipitate, which must be carefully washed." In his second process, he speaks of its extemporaneous preparation, "by boiling aqua fortis in a common iron pot, with some iron filings or nails, for a few minutes, pouring off the clear liquor, and then adding to the fluid a saturated solution of carbonate of soda, the hydrated peroxide will be precipitated in the form of a reddish powder. A saturated solution of the nitrate of iron, as also of the carbonate of soda, may be kept in separate bottles in the office of a physician, and the antidote made whenever required, by merely mixing a portion of each solution with the other." To this formula and recommendation there are two objections, of which one may be regarded as serious, viz.: that by this extemporaneous preparation, the oxide is not washed, and the highly irritated, if not inflamed, mucous coats of the stomach and œsophagus are deluged with a concentrated solution of nitrate of soda, "whose irritant properties," says Professor Ducatel, in his *Abridgement of Christison*, "will be found, most probably, to produce the same effects on the animal system as the nitrate of potassa." Such analogy should certainly deter us from the use of the extemporaneous preparation. Indeed, the author himself says above in his first formula, the precipitate "must be carefully washed," indicating his own views of the necessity of removing the new alkaline salt, and exhibiting a decided inconsistency between his formulæ, which nothing but an accidental oversight could have caused.\* The other objection to this formula is of less importance and has already been suggested in the first comment made upon the use of nitric acid for dissolving the iron.

It is believed that no objection of moment can be made to the proposed formula, herein commended; indeed, the chief defects in those

\* It may appear hypercritical to allude to the irritant properties of these nitrates, when so powerful an irritant as arsenic is to be counteracted, and if their presence was unavoidable, the comment might be attributed to an ultra disposition to find fault; but, as it has been shown that the properties of the antidote may be enjoyed unattended with accompanying irritation, these remarks are made with an honesty of purpose which, it is trusted, will be ample to disarm them of any apparent malice or discourtesy to the author.

already reviewed, arise from the anxiety to employ the preparation in its recent state, which it has been the object of this notice to prove unimportant. That it did in one case at least deprive the sufferer of its benefits, and, consequently, of his life, I am fully persuaded; and seriously have I regretted having given implicit credence, without proper reflection, and a recurrence to principle, to the idea that only a freshly prepared oxide could be relied upon.

The formula now offered is definite in its proportions, and if carefully observed, will furnish a result upon which reliance may be placed. It is based upon the equivalent proportionals of the materials, and is made to coincide as nearly as possible with the preparations of the United States Pharmacopœia, the officinal acids being employed. At my request, it has been subjected to practice by Mr. Durand, who has obtained a very perfect result, with a satisfactory economy of material.

#### *Hydrated Peroxide of Iron.*

R. Sulphuric Acid, (67° Baumé,) 8 oz. 16 pts.  
Iron Wire, 8 oz. 16 "  
Nitric Acid, (49° Baumé,) 5½ oz. 11 "  
Water of Ammonia, q. s.  
Water, 1½ gal. 384 "

Mix the sulphuric acid with the water in a glass vessel. Add the iron, and, after the effervescence has ceased, filter. Add the nitric acid in divided portions, and apply heat so long as orange coloured fumes are given off. To the heated solution, pour in the water of ammonia until a decided excess has been added, then wash the precipitate by decantation, until the washings give no precipitate with nitrate of baryta. The water is then to be drawn off until just enough remains to give the consistence of thick cream. It should be introduced into bottles of convenient size for use.

Bottles containing half a pint are recommended as convenient; and the annexed direction, it is thought, will enable the most ignorant to use it until medical advice can be obtained. "This antidote must be administered *as soon as possible* after the discovery that arsenic has been taken, and as it produces no bad effects itself, should be given *every five or ten minutes, until entire relief is obtained*.\* The dose for a grown person is a table-spoonful; for children, a dessert-spoonful. The bottle must be well shaken before each dose."

The following remarks on the preparation are from the paper of Drs. Bunsen and Berthold. After giving directions for the preparation, by means of sulphuric acid, iron, nitric acid, and ammonia, without specifying propor-

\* It is considered better to administer it thus in doses until relief is obtained, than to endeavour to give four, eight, or twelve times the amount of arsenic taken, which, for obvious reasons, can seldom be known.



tions, they proceed: "It is necessary not to lose sight of the fact, that the solution of the salt of iron must be complete before adding the nitric acid in small quantities, otherwise, a considerable amount of a neutral sulphate of peroxide will separate in the form of a yellowish powder, which is very slightly soluble.

The chloride of iron affords a means of preparing this body still less eligible, because the risk is run in precipitating, by ammonia, of obtaining an admixture of a large quantity of subchloride of iron."

"In order that the hydrated sesquioxide may not be deprived of its water, and by this means of diminishing, in the least possible degree, its feeble state of aggregation, it should not be filtered, but after having been suffered to subside for several days, the supernatant fluid being poured off, it must be preserved under water in closed vessels."

"Simple as is the process here indicated for the preparation of the antidote, there have been, nevertheless, modifications proposed, some of them so unfit that we believe it useful to add some remarks on this subject. First of all, there is one practice which ought to be rejected, that of employing another alkali than ammonia for the precipitation of the hydrate of the sesquioxide of iron, as some have done; in fact, the least quantity of alkali retained in the precipitate will give rise to the formation of an arsenite, which would abstract itself entirely beyond precipitation by the hydrate of sesquioxide of iron, because, although this base can prevail over the affinity of ammonia for arsenious acid, it could not over that of soda or potassa."\*

The subject is now submitted for the deliberate examination of the two professions who are interested in its determination, and upon whom no greater reward can be bestowed for the labour of the investigation which it merits, than the reflection that they are about to increase their ability for usefulness, and to divest the dreadful anticipation of poison of some of its risks and horrors. In treating this important question, my sole motive has been the promulgation of truth, and banishment of error; and in combatting the opinions of many who are entitled to the highest respect and confidence, I have deemed it indispensable to my own immunity from a charge of rashness, to produce evidence of the strongest character, depending upon facts which, it is believed, cannot be refuted. The introduction of therapeutical considerations has been avoided as much as possible, and only employed when essential to establish the value of particular

\* This may have been the mode employed by Dr. Robson, whose patient found himself worse after having been relieved, upon using an imperfectly washed precipitate; and felt no pain after using some which had been well washed. See Amer. Journ., Vol. 20, page 222.

preparations, and to enlighten pharmaceutical research.

Philadelphia, March 27, 1840.

## FOREIGN SUMMARY.

*Case of Diaphragmatic Hernia produced by a penetrating wound.* By JOHN REID, M. D., F.R.C.P.E., Lecturer on Physiology, President of the Anatomical Society, &c.—W. R. aged 45, a shoemaker, was admitted, on the 13th September, 1838, into the Infirmary, under the charge of Dr. Shortt, about noon. He stated that he had been seized about 4 o'clock, P. M. of the previous day with vomiting, succeeded by dyspnoea, and that the latter had continued to increase up to the time of his admission. He also stated, that for upwards of a year, he had been subject to occasional severe pain in the left hypochondriacal region, and also to cough without any expectoration. On admission he complained of great pain in the left hypochondrium, severe dyspnoea, with a depressed anxious expression of countenance; the pulse was intermittent, and so weak that it could not be reckoned. Extremities cold, and lips livid; percussion dull over the whole of the left side of the chest, and the respiratory murmur was there inaudible, while it was puerile on the right side. The sounds of the heart were only audible under the cartilages of the fourth, fifth, and sixth ribs on the right side. Had wine ordered, and sinapisms were applied to the chest and feet. Died in four hours after admission.\*

*Sectio Cadaveris, 16th September.*—Heart healthy, but somewhat displaced towards the right side. Right lung sound. The left side of the chest contained more than six pounds of a reddish fluid, but there was no recent effused lymph on the pleura. The left lung was compressed towards the spine, and also towards the edge of the cordiform tendon of the diaphragm to which it adhered; and the left side of the diaphragm was pushed downwards into the abdomen. The lung itself was devoid of air. A dark soft mass was seen lying in the lower part of this side of chest, and was connected with the upper surface of the diaphragm. On examining the upper part of the abdomen, and the lower surface of the diaphragm, it was obvious that the dark mass observed in the chest was composed of a part of the transverse arch of the colon, and a considerable mass of the large omentum, which had passed through an opening with callous edges, in the diaphragm, and become strangulated. The parts were now carefully examined *in situ*. A cicatrix nearly half an inch in length was observed in the skin at the lower part of left side of chest, midway between the anterior and poste-

\* The above account of his symptoms on admission was furnished by Dr. Alexander Wood.



rior extremities of the ribs; and, on dissecting off the skin, a similar cicatrix was found in the ninth and tenth intercostal space, exactly opposite to that in the skin. The same cicatrix was distinctly seen on looking at the inner surface of the chest, and a process of that part of the large omentum which had accompanied the transverse arch of the colon through the diaphragm, not only adhered to the edge of the cicatrix, but was incorporated with it, and projected into the intercostal space. The aperture in the diaphragm would have admitted the passage of the points of three fingers with difficulty, and was filled up by the protruding and returning portions of the transverse arch of the colon, and was situated between the last left rib and cordiform tendon of the diaphragm, and between two and three inches from the origin of the muscular fibres of the diaphragm from the last rib, and was on a line with the cicatrix in the intercostal space, but placed on a lower level when the diaphragm was depressed. On the other hand, when this muscle was pushed up, in a manner similar to what must occur, when it is in a relaxed state, or in the act of expiration, the opening in the diaphragm was then brought on a level with the cicatrix in the intercostal space, and considerably approximated to it. That part of the transverse arch of the colon which lay within the chest was at least a foot in length, was considerably dilated, and much thickened in its coats, was of a deep dark colour, was soft in several places, and at one point had given way. The two portions of the transverse arch of the colon which lay in the opening of the diaphragm were considerably constricted. The entering portion (or the portion next the *caput cæcum*) could still be drawn upwards and downwards, and the little-finger introduced into the interior of the tube could be pressed upwards, though with some little difficulty, through the opening in the diaphragm. The returning portion of the transverse arch of the colon was connected to the margin of the opening in the diaphragm through old adhesions of the omentum.\*

It was stated by a friend of this man, who was present at the inspection, that he had received a wound about fifteen months ago, in the lower part of left side of chest with a shoemaker's knife, in a quarrel with a woman with whom he cohabited, and that she was liberated from prison after his apparent recovery. Between the time of his receiving the wound and his death, it appears that he was at two different times a patient in the Infirmary with symptoms of severe ileus, and was at each time dismissed apparently cured.

Though an examination of all the circumstances connected with this case leads us to the conclusion, that the protrusion of the transverse arch of the colon into the cavity of the

left pleura took place in consequence of a wound made in the diaphragm, and that this was the cause of death, yet there are various considerations, arising from the accounts given by authors of cases where a greater or less number of the abdominal viscera had passed into the thorax from a congenital deficiency in the diaphragm, which ought to be carefully weighed before we can venture to give a definite opinion in similar occurrences, as this may involve most important consequences. Doubts will, and ought, under such circumstances, to exercise an amount of influence on our decisions, which we might not be disposed to allow them in ordinary cases. The fact, that the omentum not only adhered to the edges of the cicatrix of the wound observed on the inner surface of the thorax, but was also incorporated with it, and projected into the intercostal space, is sufficient to prove, that the omentum was present in the left side of the chest during the time that the wound was healing; but it is not of itself sufficient to decide the question which may be raised, as to the possibility of the passage of the intestine into the chest at some period previous to the infliction of the wound.

1. The first consideration which naturally presents itself on examining the recorded cases of the passage of some of the abdominal viscera into the thorax from congenital deficiency of part of the diaphragm, is the circumstance, that, though a considerable number of these have been observed in infants who were either still-born, or who died within a few weeks after birth, and had oppressed breathing from the moment of birth up to their death; yet there are others where the individual lived several years, and in some cases even to an advanced age, without any suspicion having been entertained that such a displacement of the abdominal viscera existed. In some of these, however, as we shall immediately see, the respiratory function was more or less embarrassed.

Riverius\* relates the case of a young man, who, when slowly convalescing from intermittent fever, took an antimonial emetic from an empiric, and after ineffectual efforts to vomit, died some hours after. On dissection, the stomach was found in the right side of the chest, and the lung of that side was defective. Up to the time of his death, this young man had experienced no dyspnœa, had enjoyed good health up to the period of his last illness, and had served as a soldier. G. T. Weyland† has minutely detailed the case of a boy seven years of age, who had been affected with frequent vomiting from his infancy. He appeared to have no other complaint; but this, from

\* Opera Omnia Medica. Observ. Centuria Quarta, Observ. 67, p. 549. Lugd. 1690.

† Dissertatio Inauguralis Medica Duos Exhibens Casus Dislocationis Viscerum nonnullarum Abdominis. Jenae, 1831.

\* The preparation is preserved in the University Museum.



its frequency, rendered his body thin and imperfectly nourished. He was not observed to have any difficulty of breathing, even when playing with his companions. When he was 7 years of age, the vomiting became so frequent, accompanied by pain of head and abdomen, and his health was suffering so much, that a physician was sent for. After being subjected to treatment for about twelve days, he began slowly to recover his strength. Fourteen days after this, he had a relapse after exposure to cold, and he died. On removing the sternum, the left side of the chest was seen to be filled with the folds of the intestines as high as the second rib, and the left lung was consequently much diminished in size, and devoid of air. The stomach was placed in the abdomen, was of great size, and lay in a vertical position, its pyloric extremity extending downwards to the pelvis. Dr. *Monro, Tertius*, has detailed two very interesting cases of this kind. One was a female 22 years of age, who died with symptoms of internal strangulation; and on inspection of the body, a large portion of the arch of the colon was found to have passed through a small opening in the left side of the diaphragm. She never had any difficult breathing, but was subject to pain in the lower part of the left side. The other was a male of middle age, who died with cerebral symptoms, accompanied with difficult breathing and expectoration, and the arch of the colon and the omentum were found in the left side of the chest. He had an attack of ileus four months previous to his death.\* *Bartholin†* and *Clauder‡* relate the case of a man who had always enjoyed a free and easy respiration, except a temporary fit of asthma, but who had long laboured under vomiting and constipation, in whom the stomach, the duodenum, part of the colon and omentum, had passed through a large opening with callous edges into the left side of the thorax. *Petit§* details the case of a man who had cholic pains and difficult breathing for forty years, and on dissection, a great portion of the colon, of the omentum, and of the splenic extremity of the stomach, had passed into the left side of chest. The protruded parts had contracted no adhesions, and were not covered by a hernial sac. *Sir Astley Cooper||* relates the case of woman, who died, when 28 years of age, with symptoms of inflammation of the abdomen of a few days standing. On dissection, about 11 inches of the transverse arch of the colon, and a great part of the omentum, had passed through an opening in the diaphragm into the left side of the chest, and the

omentum adhered to the aperture in the diaphragm. Dr. *John Clark\** details the case of a man who died, when 40 years of age, with all the symptoms of peritoneal inflammation, and on dissection, a part of the transverse arch of the colon, part of the left lobe of the liver passed through an opening in the diaphragm, which he supposed to arise from congenital malformation of that muscle. This man had enjoyed good health up to the two last years of his life. As he had received a fracture of two of his ribs a year before his death, it may be argued that a rupture of the diaphragm may have occurred at that time; yet, as it is stated that he recovered from the injury without any unusual symptoms, the case may at least be adduced as additional evidence of the fact, that part of the abdominal viscera may be present in the chest without any symptom to indicate their presence. *Chauvet†* states, that on examining the body of a lieutenant-colonel, he found the stomach and colon in the left side of the chest. And *Vetter‡* observed in a very old person the whole tract of the small intestines lying in the left side of the chest.§ Along with the above cases we may also include other three, in which part of the abdominal viscera appear to have protruded upwards into the thorax through the interval which naturally exists between the outer edges of the muscular fibres of the diaphragm which arise from the ensiform cartilage of the sternum, and those which arise from the cartilages of the ribs. One of these is related by *Morgagni||*. It occurred in a man about 50 years of age, who died from a fracture of the skull, and the protruding part was the colon. A second case is related by *Sir Astley Cooper¶*, on the authority of Mr. Bowles, and in this the right extremity of the stomach, the beginning of the duodenum, and part of the omentum, protruded into the right side of the chest, and were covered by a hernial sac formed by the peritoneum and the pleura. This man was also fifty years of age, and subject to asthmatic attacks, and died from excessive vomiting, after the exhibition of an emetic, as occurred in the case related by *Riverius,\*\**

\* Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, Vol. ii. p. 118.

† Histoire de l'Academie Royale des Sciences de Paris for 1729, p. 14.

‡ Aphorismen aus der Pathologischen Anatomie, S. 144, as quoted by Weyland.

§ Chauvet says nothing about the state of the respiratory and digestive organs during life in the case which he relates; and Weyland does not inform us whether the previous history of the case by Vetter, was ascertained.

|| De Sedibus et Causis Morborum, Lib. iv. Epistol. 54, § 11.

¶ Opus cit. p. 14.

\*\* Petit (opus cit.) relates the case of a man

\* Morbid Anatomy of the Gullet, Stomach, and Intestines, p. 180. 2d edition.

† Boneti Sepulch. Anat. Tom. ii. p. 803.

‡ Vide Sepulchretum, et Morgagni de Sedibus et Causis Morborum, Lib. iv. Epist. 54. § 11.

§ Malades Chirurgicales, Tom. ii. p. 161. 1783.

|| Medical Records and Researches. London, 1796.



Another case, where the diaphragmatic hernia protruded through the interval on the right margin of the fibres arising from the ensiform cartilage, is related by Professor Bignardi.\*

After a knowledge of the above cases, it could not be argued that, if the protrusion of the transverse arch of the colon, in the case we have detailed, had arisen from congenital deficiency in the diaphragm, it must have manifested itself before the reception of the wound, by some embarrassment of the respiratory function. The fact, moreover, that this protrusion must have existed from the time of the infliction of the wound up to his death, without any marked impediment to the respiration, is obviously quite sufficient to invalidate any similar argument.

2. In the case we have related the protrusion of the colon through the diaphragm had occurred on the side of the chest, in which it is generally found in cases of deficient formation of the diaphragm. Of twenty-four recorded cases (not including the three last referred to,) which I have examined for this purpose, I find that in three only had the protrusion happened on the right side. One of these is the case of Riverius, already referred to; another is one of the two cases mentioned by Dr. Macaulay,† and one by Bonn.‡

3. The congenital deficiencies in the left side of the diaphragm, not only vary in extent, but also in position. In several of the recorded cases, the deficiency appears to have included the whole of the left side of the diaphragm, and in others it is merely stated that the opening was on the left side. In two cases the opening was placed in the cordiform tendon, (case of Petit, and one of the cases of Weyland;) in one it was stated to have been near the opening for the *cava ascendens*, (one of Vetter's cases;) in one the protrusion is said to have occurred through the opening for the sympathetic nerve, (Platner's Disput. De Hydrocel, as quoted by Morgagni;) in three the protrusion occurred through the œsophageal opening (Resigius de Ventriculi in Cavo Choracis Situ Congenito, Berlin, 1823;) a case by Fantoni, as quoted by Monroe, and a case by Clauder; in one it was placed an inch to the left of the œsophageal opening, (one of Dr. Macaulay's

cases;) in one, it was placed three inches to the left of the œsophagus, (case of Sir A. Cooper;) in one, in the middle of the left portion of the diaphragm, (one of Monroe's cases;) and in one (supposing it to be a case of congenital hernia) it must have occupied nearly the same situation as in the case we have described, since it is stated to have been situated "about three inches from the ribs, and placed more anteriorly than the œsophagus."

4. In at least two of the recorded cases, the protruding parts were firmly adherent to the edges of the opening, (cases of Sir A. Cooper and Chauvet.)\* We would certainly expect that in cases of wound of the diaphragm, that if the person survived, inflammation of the edges of the divided-muscle would occur, and probably cause adhesion between the edges of the wound and the parts which may have protruded into it, as in the case we have described. That lymph may be effused and unite the protruded parts to the edges of the opening in some cases of congenital deficiency of a part of the diaphragm, is, *a priori*, certainly quite possible, and in two cases which we have cited above it had actually occurred.

5. Some of the cases of congenital deficiency of the diaphragm terminated fatally, as in ours, by strangulation of the protruding portion of the intestines, (cases of Dr. Clark, Sir A. Cooper, and Monroe.)

Approaching the consideration of this case with all the caution which an examination of the recorded cases of congenital malformation of the diaphragm must naturally induce, we still feel strongly convinced that the protrusion of the colon was the consequence of a wound of the diaphragm. If we reflect upon the circumstance, that a sharp instrument could scarcely be thrust into the chest through the ninth and tenth intercostal space, where the cicatrix was found, without wounding the diaphragm, and thus necessarily at the part where the opening in it was found, if the muscle be in a relaxed state, or during expiration, as we have frequently satisfied ourselves upon the dead body; upon the great rarity of such small congenital deficiencies in the diaphragm; upon the uneasiness felt by the patient in the left hypochondrium, and the severe attacks of ileus after the infliction of the wound; conjoined with the improbability that a person could have arrived at the age of 45 without fatal strangulation of the intestine, and have acquired an athletic form of body, when that part of the intestine passing through the opening would with difficulty admit the passage of the little finger, even when the returning portion was empty,—we can scarcely suppose that the conjunction of the opening in the diaphragm and the infliction of the wound in the parietes of the chest, were in this individual a mere co-

long subject to dyspnœa, and who had been treated for asthma, in whom the stomach, the colon, and the omentum were pushed up into the left side of the chest, and were enclosed in a sac formed by the diaphragm, peritoneum, and the pleura. See also Beclard's Supplement au Traite de Scarpa, p. 132, for two cases where the sac was formed by the pleura and peritoneum.

\* Sull' ernia diaphragmatica, 1827, as quoted by Laurence.

† Medical Observations and Inquiries, Vol. i. p. 26, London, 1763.

‡ Descriptio Thesauri Ossium Morbosorum Hoviani, No. 204, p. 69, as quoted by Laurence.

\* In Sir A. Cooper's case, the omentum was the adherent part.



incidence. It ought not, however, to be concealed, that a more accurate account of the previous history of the patient than we are able to give would have been very desirable.

Believing that the protrusion of the intestine into the chest was in this case the consequence of a wound in the diaphragm, there are some cases on record which bear to it a greater or less resemblance; and it is of some importance to know, that the accounts given of them do not discountenance the idea we have formed of the nature of this case. Sennertus relates, in a letter to Hildanus,\* the case of a man who stabbed himself beneath the ninth left rib, and died about seven months afterwards. On dissection the stomach was found to have protruded through the cordiform tendon into the left side of the chest.† In this case the seat of the wound in the parietes of the chest must have been placed nearer the sternum than in the one we have detailed. Ambrose Paré‡ relates the case of a person who died eight months after receiving a penetrating wound in the chest, and in whom a large portion of the colon was found in the cavity of the left pleura. This person had suffered from colic pains after the reception of the wound. Mr. Boyle§ gives the case of a soldier who received a wound in the chest eleven months before his death. He died with symptoms of peritoneal inflammation, and a great part of the ileum and transverse arch of the colon had passed through an opening in the diaphragm, and became strangulated. From the time he received the wound "the respiration was affected, and even moderate exercise was supported with difficulty." Mr. Greetham|| has published a case of a muscular man, between 30 and 40 years of age, who had been wounded by a knife some years before in the left side of the chest, and who died with all the symptoms of strangulated intestine. On dissection, the omentum and a part of the colon had protruded through an opening in the cordiform tendon of the diaphragm. He had at times severe pains in the stomach after the infliction of the wound; but he had been able to act as a steward in a vessel during several distant voyages. The larger curvature of the stomach was drawn upwards towards the opening in the diaphragm by the omentum in the chest, so that it was nearly reversed.

Dr. M'Crie¶ has given an account of a preparation preserved in the Chatham Museum, obtained from a soldier who had been wounded

twenty-two years before, and who died of gangrene of the lower extremities. In this case the stomach and a great part of the transverse arch of the colon had passed into the chest. After the reception of the wound up to the time of his death, he laboured under dyspeptic symptoms, and his breathing was affected on walking fast, or on ascending a hill, but these did not prevent him from acting as a sergeant in his regiment.

It would also appear that similar effects may result from laceration of the diaphragm from a fall. Dessault\* relates the case of a man who received a fall when 39 years of age, and who lived four years after this, in whom the stomach and arch of the colon had passed through an opening with callous edges into the left side of the chest. Though he was able to return to his usual employment after his recovery, he continued to complain of pain of chest and oppression of the breathing. Mr. W. D. Morgan has described the history of a patient who died in the Bristol Hospital, in whom several parts of the alimentary canal were found within the left side of the chest. The opening in the diaphragm was attributed to a fall upon his back received thirty-eight years before. From the time of the injury to his death, he was able to follow his usual occupation as a mason, but had often suffered from asthmatic dyspnoea, dyspepsia and constipation.† A very remarkable case is related by Mr. Taylor,‡ of a man who had received many years before his death, a fall in which some of the left ribs were fractured. On dissection, a great part of the left side of the chest was filled by the stomach, and a large part of the transverse arch of the colon, yet he was able to perform the usual duties of a sailor up to his last illness, and the respiration appears to have been little affected. This man died after amputation of a leg.

*Ed. Med. and Surg. Journ. Jan., 1840.*

*The Army.*—Of the value of the two classes as soldiers, recruits from the agricultural class are held in the Army to be more trustworthy than those from trades and manufactures. Agricultural labourers generally enter the Army in consequence of some family difficulty or discord; while recruits who are enlisted in the manufacturing districts are frequently idle and dissolute, and require all the means in the power of officers to correct their intemperate and vicious habits. Mr. Marshall mentions, as an evidence of the improved condition of the people, that in one district, upon an average, from one-fourth to one-third who enlist, pay the smart-money, and all the other expenses which have been incurred on their account, rather than complete the enlistment before a magistrate.

*London Lancet.*

\* G. F. Hildani, *Medico-Chirurgi, Obser. et Curat. Chirurg. Centuriæ. Cent. ii. Observ. xxxiii. 1541.*

† Vide Morgagni de *Sedibus et Causis Morborum*, Lib. iv. Epistol. 54, §. 12 for other cases.

‡ Lib. 9, Cap. 30.

§ Vol. viii. of this Journal.

|| Medical Gazette, Vol. x. p. 43.

¶ Medical Gazette, Vol. xv. p. 872.

\* Journal de Chirurgie per Dessault, Tom. iii.

† Medical Gazette, Vol. xii. p. 673.

‡ Guy's Hospital Reports, Vol. iii. p. 366.